**IN THE CLAIMS**

1. (Original) A method for obtaining a homogenous sample for compositional analysis of a pressurized multi-phase fluid stream flowing in a pipeline, the fluid stream consisting of a majority component of hydrocarbon gas, the minor component consisting of a minor proportion of one or more hydrocarbon liquids and water in the form of vapor, aerosols, droplets and/or liquid streams, the method comprising:

a. injecting one or more surface active agents ("saa") into the fluid stream in an injection zone at a rate that is sufficient to form a stable uniform foam of the gas and the one or more hydrocarbon liquids and water components;

b. mixing the one or more saa with the fluid stream in a mixing zone to form a uniform foam composition flowing in the pipeline downstream of the mixing zone;

c. withdrawing a portion of the foam composition from the pipeline at a sampling point;

d. passing the portion of the foam composition withdrawn from the pipeline through a sampling loop that is in communication with the pipeline;

e. removing a sample of predetermined volume of the foam from the sampling loop for compositional analysis; and

f. analyzing the foam to determine the amount of hydrocarbon and water present.

2. (Original) The method of claim 1, wherein the mixing zone includes mixing means selected from the group consisting of in-line static mixers, injection jets, strainers,

screens, pressure strainers, screens, pressure change regions, pumps, piping bends, valves, metering stations, compressors, and combinations thereof.

3. (Original) The method of claim 1 which includes the further step of analyzing the foam sample to determine the relative proportions of hydrocarbon gas, hydrocarbon liquid and water content.

4. (Original) The method of claim 1 which includes the further step of placing the foam sample in a sample container for subsequent analysis.

5. (Original) The method of claim 4, wherein the foam sample is analyzed by an automated in-line analysis apparatus.

6. (Original) The method of claim 1, wherein the foam composition is withdrawn from the pipeline through a sampling probe.

7. (Original) The method of claim 1, wherein the foam composition is withdrawn from the pipeline at the sampling point by pumping.

8. (Original) The method of claim 1, wherein the pipeline is a commercial gas transmission pipeline and the sampling point is located in a portion of the pipeline where the custody for the flowing fluid stream is transferred from a first party to a second party.

9. (Original) The method of claim 1 which includes the further step of injecting a defoaming composition into the flowing fluid downstream of the sampling point.

10. (Original) The method of claim 1 which includes passing the foam composition through a flow meter that is in fluid communication with the sampling loop.

11. (Original) The method of claim 1, wherein the one or more surface active agents is selected from the group consisting of fluorocarbon, cationic, anionic and non-ionic compounds.

12. (Original) The method of claim 11, wherein the one or more surface active agents are selected from the group consisting of alkyl sulfonates, including linear $C_{16-18}$ alpha-olefin sulfonate; alkyl aromatic sulfonates; di-sulfonates; alkyl and alkyl-aryl sulfonates including $C_{15-18}$ alkyl-toluene sulfonates; fluorocarbon/hydrocarbon blends; fluorinated alkyl esters; alcohol sulfates; alcohol ether sulfates; alcohol ethoxylate having $C_{9-11}$, $C_{12-15}$, $C_{12-13}$, and $C_{14-15}$ alkyl groups; alcohol ethoxyglycerl sulfonate having $C_{9-11}$ and $C_{12-15}$ groups; octylphenol ethoxyethyl sulfonate with a $C_8$ alkyl group; nonylphenol ethoxyacetate with a $C_9$ alkyl group; carboxymethylhydroxy propyl/guar polymer gel; ethoxylated alcohols; ethoxylated sulfates, including their sodium and ammonium salts; ethoxylated nonylphenols; ethoxylated alkyl phenols; alkanolamides; ethoxylated fatty acids; glycerol ester hydrotropes; amine oxides; lauryl sulfates; mono- and diglycerides; betaine-derived compounds; phosphate esters; quaternnary compounds; sorbitan

derivatives; dodecylbenzene sulfonic acid; perfluoro compounds; pefluorooctanylbutane sulfonate; and mixtures of these compounds.

13. (Original) The method of claim 1, wherein the pressure and temperature of the foam composition in the sampling loop and the pipeline are substantially the same.

14. (Original) The method of claim 4, wherein the pressure of the foam composition in the sample container at the time of filling the container is the same as the pressure in the sampling loop.

15. (Original) The method of claim 1 where the injection and mixing zones are the same.

16. (Original) The method of claim 1, wherein the foaming agent includes a component for creating caustic conditions.

17. (Original) The method of claim 1, wherein the analysis is used for determining the value of the fluid stream at a custody transfer point.

18. (Original) The method of claim 1, wherein the analysis is used for determining the composition of the fluid stream downstream of a well bead.

19. (Original) An apparatus for obtaining a compositional analysis is of a homogeneous sample of a multi-phase pressurized fluid stream flowing through a pipeline, where the fluid stream includes a hydrocarbon gas as a major component and a minor component consisting of one or more hydrocarbon liquids and water mixed with the gas, the apparatus comprising:

a. injection means for adding a predetermined amount of one or more surface active agents to the fluid stream;

b. means for mixing the one or more surface active agents with the components of the fluid stream in a mixing zone to form a uniform foam composition in the pipeline;

c. a sampling probe located in a sampling zone in the pipeline downstream of the mixing zone for removing a portion of the foam composition from the pipeline;

d. a sampling conduit on the exterior of the pipeline in fluid communication with the probe;

e. sample removal means for withdrawing a predetermined volume of the foam composition from the exterior sampling conduit; and

f. analytical means for identifying the hydrocarbon and water components of the foam sample.

20. (Original) The apparatus of claim 19, wherein the end of the sampling conduit opposite the sampling probe is in fluid communication with the interior of the pipeline.

21. (Original) The apparatus of claim 19, wherein the mixing means is selected from the group consisting of jet injectors, in-line static mixers, screens, strainers, pumps, conduit bends, and combinations thereof.

22. (Original) The apparatus of claim 19, wherein a plurality of surface active agents are pre-mixed before addition to the fluid stream.

23. (Original) The apparatus of claim 19, wherein the injection means comprises a metering pump for each of the one or more surface active agents to be added to the fluid stream.

24. (Original) The apparatus of claim 19 further comprising defoaming means positioned downstream of the sampling probe for injecting a defoaming composition into the fluid stream.

25. (Original) An apparatus for providing a homogeneous sample of a multi-phase pressurized fluid stream flowing through a pipeline, where the fluid stream includes a hydrocarbon gas as a major component and one or more hydrocarbon liquids and water mixed with the gas, the apparatus comprising:

a. injection means for adding a predetermined amount of one or more surface active agents to the fluid stream;

b. means for mixing the one or more surface active agents with the components of the fluid stream in a mixing zone to form a uniform foam composition in the pipeline;

c. a sampling probe located in a sampling zone in the pipeline downstream of the mixing zone for removing a portion of the foam composition from the pipeline;

d. a sampling conduit on the exterior of the pipeline in fluid communication with the probe; and

e. sample removal means for withdrawing a predetermined volume of the foam composition from the exterior sampling conduit.

26. (Original) The apparatus of claim 25, wherein the end of the sampling conduit opposite the sampling probe is in fluid communication with the interior of the pipeline.

27. (Original) The apparatus of claim 25, wherein the mixing means is selected from the group consisting of jet injectors, in-line static mixers, screens, strainers, pumps, conduit bends, and combinations thereof.

28. (Original) The apparatus of claim 25, wherein a plurality of surface active agents are pre-mixed before addition to the fluid stream.

29. (Original) The apparatus of claim 25, wherein the injection means comprises a metering pump for each of the one or more surface active agents to be added to the fluid stream.

30. (Original) The apparatus of claim 25 further comprising defoaming means positioned downstream of the sampling probe for injecting a defoaming composition into the fluid stream.

31. (Original) Apparatus for creating a homogeneous gas-liquid mixture for sampling comprising: an injection zone including injection means having a discharge port in fluid communication with a moving a stream of gas-liquid mixture contained in a pipeline for injecting a foam-generating surfactant agent into the gas-liquid stream; a downstream mixing zone that includes mixing means for mixing the surfactant and the gas-liquid stream to induce a uniform foam composition; and a sampling zone downstream of the mixing zone that includes sampling means for removing a sample of the foam composition from the stream in the pipe.

32. (Original) The apparatus of claim 31, wherein the induced foaming results in a substantially homogeneous fluid stream in the sampling zone, said apparatus further comprising a sample probe for sampling the substantially homogeneous fluid stream at the sampling position.